

REMARKS

Claims 1, 3-12, 15-23, 25-26, 28 and 31-35 are pending. Claims 33-35 are allowed. Claim 16 is objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1, 3-12, 15, 17-23, 25, 26, 28 and 31 are rejected under 35 U.S.C. §103(a). Claims 1, 4-12, 15-18, 20-23 and 33-35 are provisionally rejected on the ground of non-statutory obviousness-type double patenting.

Applicant addresses these rejections below.

I. REJECTIONS UNDER 35 U.S.C. §103(a):

The Examiner has rejected claims 1, 3-12, 15, 17-21, 25, 26, 28 and 31 under 35 U.S.C. §103(a) as being unpatentable over Goodwin et al. (WO 02/28548) (hereinafter "Goodwin") in view of Badyal et al. (WO 98/58117) (hereinafter "Badyal"). Furthermore, the Examiner has rejected claim 22 under 35 U.S.C. §103(a) as being unpatentable over Goodwin in view of Badyal and in further view of Vaartstra et al. (U.S. Patent No. 6,402,126) (hereinafter "Vaartstra"). Additionally, the Examiner has rejected claim 23 under 35 U.S.C. §103(a) as being unpatentable over Goodwin in view of Badyal and in further view of Ruta et al. (U.S. Patent No. 6,012,647) (hereinafter "Ruta") and The Generation and Measurement of Aerosols (hereinafter "Bailey"). Applicant respectfully traverses these rejections for at least the reasons stated below and respectfully requests the Examiner to reconsider and withdraw these rejections.

A. Claims 1, 3-12, 15, 17-21, 25, 26, 28 and 31 are not properly rejected under 35 U.S.C. §103(a) as being unpatentable over Goodwin in view of Badyal.

The Examiner rejects independent claim 1 under 35 U.S.C. §103(a) as being unpatentable because it would allegedly be obvious for one of ordinary skill in the art to combine Goodwin and Badyal to arrive at the current invention. Office Action (6/23/2009), pages 2-3.

Applicant respectfully disagrees. In the present invention, the mechanism of deposition is completely different to that disclosed in Goodwin and Badyal. This is because in the current invention there is present atomised liquid, typically in the form of droplets, which either become activated during the plasma on-period of the plasma pulsing, or impinge and spread upon the substrate during the plasma off-period. Due to the pulsing of the plasma, the material which has impinged and spread on the substrate is subsequently activated during the subsequent plasma on-period.

Goodwin, on the other hand, teaches a method of producing a coating on a substrate using an atmospheric pressure plasma discharge and introducing the coating forming material through an atomiser. Goodwin does not teach the use of a pulsed plasma discharge to coat the substrate. As a result, there is a difference in the mechanism of material deposition between the current invention and Goodwin because there is no plasma off-period and therefore there is no opportunity for the atomised liquid to impinge and spread upon the substrate, or for said impinged and spread liquid to be activated by the subsequent plasma on-period.

The Badyal citation teaches a completely different method of forming a coating. Badyal teaches the use of pulsed plasma in a vacuum to form a coating from gaseous/vapour phase coating forming material (paragraph 4, line 25). As such, there is no atomised liquid present, only gas/vapour phase monomers in a vacuum in both the plasma on and plasma off conditions of the pulsed plasma. This mechanism is different again to that of the present invention because the plasma on-period generates polymerization initiation sites which then polymerize gas/vapour phase monomer molecules during the plasma off-period.

It is well known in the art that gas/vapour phase coating forming, as discussed in Badyal, is much slower than deposition of liquids of Goodwin. This is due to the inherent low density of gas/vapour monomers compared to the much higher density atomised liquid droplets. Thus, the plasma off-period in Badyal is used to achieve very low average powers (paragraph 4, lines 49-56), whilst maintaining a suitable power to maintain a practical rate of deposition.

Taking into account the above, the skilled person would have no motivation to combine the method of Goodwin with the plasma pulsing of Badyal to achieve improved coatings because the mechanism of coating formation is so different. There is no suggestion in Badyal that pulsing of the plasma would have a beneficial effect for atomised liquid coating formation of Goodwin.

Furthermore, the skilled person would understand that the rate of deposition is relatively high in Goodwin and coatings are formed with the required properties and structural retention. Thus, by incorporating pulsing from Badyal, the skilled person would be aware that the average energy would be lower, and, as a result, the rate of deposition less. With no suggestion of improving the coating mechanism (because of the abovementioned differences between gas/vapour and liquid deposition) the skilled person would be discouraged to combine the teachings of the documents.

As a result of the above, Applicant respectfully asserts that claim 1 is patentable over Goodwin in view of Badyal.

Claims 3-12, 15, 17-21, 25, 26, 28 and 31 each recite combinations of features of independent claim 1, and hence claims 3-12, 15, 17-21, 25, 26, 28 and 31 are patentable over Goodwin in view of Badyal for at least the above-stated reasons that claim 1 is patentable over Goodwin in view of Badyal.

- B. Claim 22 is not properly rejected under 35 U.S.C. §103(a) as being unpatentable over Goodwin in view of Badyal and in further view of Vaartstra.

Claim 22 recites the combinations of features of independent claim 1, and hence claim 22 is patentable over Goodwin in view of Badyal and in further view of Vaartstra for at least the above-stated reasons that claim 1 is patentable over Goodwin in view of Badyal.

- C. Claim 23 is not properly rejected under 35 U.S.C. §103(a) as being unpatentable over Goodwin in view of Badyal and in further view of Ruta and Bailey.

Claim 23 recites the combinations of features of independent claim 1, and hence claim 23 is patentable over Goodwin in view of Badyal and in further view of

Ruta and Bailey for at least the above-stated reasons that claim 1 is patentable over Goodwin in view of Badyal.

II. DOUBLE PATENTING:

The Examiner has provisionally rejected claims 1, 4-12, 15-18, 20-23 and 33-35 under the judicially created doctrine of obviousness-type double patenting in view of claims 1, 5-11, 14-21, 25 and 26 of co-pending Application No. 10/514,661 in view of Goodwin. Office Action (6/23/2009), page 7.

Since none of these Applications at issue have been allowed, Applicant defers responding to this rejection.

Applicant notes that if the "provisional" double patenting rejection is the only rejection remaining in the present application, then the Examiner should withdraw the rejection and permit the present application to issue as a patent. M.P.E.P. §804. The "provisional" double patenting rejection may then be converted into a double patenting rejection in the co-pending application at the time the present application issues as a patent. M.P.E.P. §804.

III. CONCLUSION:

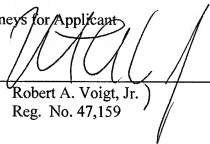
As a result of the foregoing, it is asserted by Applicant that claims 1, 3-12, 15-23, 25-26, 28 and 31-35 in the Application are in condition for allowance, and Applicant respectfully requests an allowance of such claims. Applicant respectfully requests that the Examiner call Applicant's attorney at the below listed number if the Examiner believes that such a discussion would be helpful in resolving any remaining issues.

Respectfully submitted,

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